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10/594,399	09/26/2006	Shaow Lin	DC10103 PCT1	9226

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EXAMINER

LOEWE, ROBERT S

ART UNIT	PAPER NUMBER
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1796

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,399	Applicant(s) LIN ET AL.	
	Examiner ROBERT LOEWE	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/26/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Applicant's claim priority to provisional applications 60/563,663 (filed 4/20/04), 60/611,258 (filed 9/17/04), 60/611,151 (filed 9/17/04) and 60/611,229 (filed 9/17/04). However, provisional application 60/563,663 has no support for independent claims 1, 11 and 15; therefore this priority date will not be acknowledged.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 17 and 18 recite the limitation "the silicone". There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination, instant claims 17 and 18 will be interpreted as being dependent from instant claim 16. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Schilling, Jr. et al. (US Pat. 4,150,048).

Schilling, Jr. et al. teaches an (AB)_n block silicone polyether copolymer having the structural limitations of instant claims 1, 4, 6 and 8 (Examples 11-24). Schilling, Jr. et al. further teaches an aqueous composition comprising the (AB)_n block silicone polyether copolymers (5:60-6:3). Since Schilling, Jr. et al. teaches aqueous compositions using the same (AB)_n block silicone polyether copolymers as instant claim 1, it inherently follows that the aqueous dispersions comprised dispersed particles having an average particle size of less than 10 nm.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsubaki et al. (US Pat. 5,472,686) in view of Cen et al. (US Pat. 6,632,420).

Claim 1: Tsubaki et al. teaches the preparation of $(AB)_n$ silicone polyether poly(block copolymers) having the structural limitations of instant claim 1 (4:5-67 and Examples 1-5). Tsubaki et al. further teaches cosmetic formulations comprising such $(AB)_n$ silicone polyether poly(block copolymers) (examples 8, 10-11, 13, 15, 17, 19, 21 and 23). Tsubaki et al. does not explicitly teach that the cosmetic formulations employ aqueous dispersions of the poly(block copolymers). However, Cen et al. does teach a cosmetic formulation comprising an aqueous microemulsion of a polysiloxane polyether copolymer. Tsubaki et al. and Cen et al. are combinable because they are from the same field of endeavor, namely, personal care products comprising polysiloxane polyether block copolymers. At the time of the invention, a person having ordinary skill in the art would have found it obvious to employ the siloxane polyether $(AB)_n$ copolymers as taught by Tsubaki et al. as a component in the process of forming aqueous microemulsion compositions as taught by Cen et al. and would have been motivated to do so because Tsubaki et al. teaches the benefits of personal care products which comprise the $(AB)_n$ blocks taught therein. Further, Tsubaki et al. teaches that the poly(block copolymers) have use in cosmetic formulations such as for treatment of underarm hair, which is the main objective of Cen et al.

Claim 2: Tsubaki et al. further teaches that the $(AB)_n$ block silicone polyether copolymer has an average formula value of m of 2, R is methyl and R^1 is propylene (reaction a; bottom of columns 3 and 4), and the weight average molecular weight is from 5,000 (example 5) to 95,000

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(example 1), which fully encompasses the claimed range of instant claim 2. While, Tsubaki et al. teaches that " R^1 represents a monovalent hydrocarbon" (4:18-19) and all experimental embodiments use a $(CH_2CH(CH_3)CH_2)$ spacer (R^1 equals $-CH_3$), it nevertheless follows that it would be obvious to employ the $(AB)_n$ block silicone polyether copolymers where R^1 is a hydrogen, resulting in a $(CH_2)_3$ (propylene) spacer since it is explicitly taught by Tsubaki et al.

Claims 3, 7 and 9-10: Tsubaki et al. does not explicitly teach an aqueous dispersion comprising an $(AB)_n$ block silicone polyether copolymer wherein the dispersed particles have an average particle size of less than 10 microns. However, Cen et al. teaches aqueous dispersions/microemulsions of silicone polyethers as applied to claim 1 above having average particle sizes of less than 10 microns (1:65-2:4). Cen et al. further teaches that water miscible volatile solvents (6:58-62) and volatile methyl siloxanes (3:24-4:24) may be included in the antiperspirant compositions. Tsubaki et al. and Cen et al. are combinable because they are from the same field of endeavor, namely, personal care products comprising polysiloxane polyether block copolymers. At the time of the invention, a person having ordinary skill in the art would have found it obvious to employ aqueous dispersions having dispersed particles of less than 10 microns as taught by Cen et al. which comprising the $(AB)_n$ block silicone polyether copolymers as taught by Tsubaki et al. and would have been motivated to do so because Cen et al. implicitly teaches that for purposes of aesthetics, optically clear antiperspirants and deodorants (i.e., having particle/domain sizes of less than 550 nm, or 0.55 microns) are preferred.

Claim 4: Tsubaki et al. further explicitly teaches that the $(AB)_n$ block silicone polyether copolymers have $x/(x+y)$ values within the claimed range of instant claim 4 (example 1, $x/(x+y) = 0.44$ [(41/(41 + 18 + 33) = 0.44].

Claim 6: Tsubaki et al. further explicitly teaches that x is equal to 41, which encompasses the claimed range of instant claim 6 (example 1).

Claim 8: Tsubaki et al. further explicitly teaches that x is equal to 9, which encompasses the claimed range of instant claim 8 (example 1).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsubaki et al. (US Pat. 5,472,686) in view of Cen et al. (US Pat. 6,632,420), as applied to instant claims 1 and 3 above, further in view of Hill et al. (US Pat. 5,364,633).

Tsubaki et al. in view of Cen et al. collectively teach an aqueous composition of instant claims 1 and 3, as described above. Tsubaki et al. does not explicitly teach an aqueous composition in the form of vesicles. However, Hill et al. does teach aqueous dispersions in the form of vesicles. Tsubaki et al. and Hill et al. are combinable because they are from the same field of endeavor, namely, formulations comprising siloxane polyether block copolymers. At the time of the invention, a person having ordinary skill in the art would have found it obvious to prepare silicone vesicles as taught by Hill et al. using the silicone-polyether structures as taught by Tsubaki et al. and would have been motivated to do so because Hill et al. teaches the many advantages of using siloxane surfactants in vesicle form, such as substance entrapment, the ability of siloxane surfactants to "spontaneously" form vesicles, and the ability to modulate the siloxane backbone through chemistry (1:30-43). Tsubaki et al. would benefit from employing vesicle structures for all of the above reasons, especially when employing compositions which have hydrophobic compounds (examples 8, 10-11, 13, 15, 17, 19, 21 and 23).

Claims 1-4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cen et al. (US Pat. 6,632,420) in view of Tsubaki et al. (US Pat. 5,472,686).

Claims 1-4 and 6-8: Cen et al. teaches an aqueous dispersion of silicone polyether graft copolymers (4:52-61), AB copolymers (4:62-67), of ABA copolymers (5:1-5) wherein the dispersed particles have an average particle size of less than 10 microns (1:65-2:4).

Cen et al. does not teach that the silicone polyether graft copolymer is of the $(AB)_n$ type of instant claim 1. However, Tsubaki et al. does explicitly teach $(AB)_n$ block silicone polyether copolymers which have the structural limitations of instant claims 1, 2, 4, 6 and 8 [reaction (a) at the bottom of columns 3 and 4 and examples 1 and 5]. Cen et al. and Tsubaki et al. are combinable because they are from the same field of endeavor, namely, personal care compositions comprising silicone polyether copolymers. At the time of the invention, a person having ordinary skill in the art would have found it obvious to employ the $(AB)_n$ block silicone polyether copolymers as taught by Tsubaki et al. into the aqueous microemulsions as taught by Cen et al. and would have been motivated to do so because Tsubaki et al. teaches the advantages that the $(AB)_n$ block silicone polyether copolymers have in various cosmetic formulations when compared to the graft silicone polyether copolymers and ABA block silicone copolymers such as those taught by Cen et al. (control examples 9, 12, 13, 16, 18, 20, 22 and 24 of Tsubaki et al.).

Cen et al. teaches a personal product (antiperspirant) resulting from the process of instant claim 1 (example 1).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cen et al. (US Pat. 6,632,420) in view of Tsubaki et al. (US Pat. 5,472,686), as applied to instant claims 1 and 3 above, further in view of Hill et al. (US Pat. 5,364,633).

Cen et al., in view of Tsubaki et al. collectively teach the process for making an aqueous dispersion of instant claims 1 and 3, as described above. Cen et al. further explicitly teaches a process to prepare silicone-containing microemulsions (1:40-51). Cen et al. further teaches that there are various types of microemulsions (2:5-19), including those having "random-oriented lamellar-like surfactant double layers (bilayers)". While Cen et al. does not explicitly teach the term "vesicle", the forms of microemulsion taught by Cen et al., such as the one comprising surfactant double layers (bilayers) has all of the features of a vesicle structure. A vesicle is a specific type of surfactant composition wherein the surfactant polymers are arranged in one (or more) bilayer structures (lamellae). Therefore, Cen et al. does teach that the microemulsion may be in the form of vesicles. While no specific examples of such microemulsion structures are taught by Cen et al., Hill et al. does teach silicone vesicle compositions (abstract). Cen et al. and Hill et al. are combinable because they are from the same field of endeavor, namely, compositions containing silicone-polyether surfactants. At the time of the invention, a person having ordinary skill in the art would have found it obvious to prepare silicone vesicles as taught by Hill et al. using the silicone-polyether structures as taught by Cen et al. and would have been motivated to do so because Hill et al. teaches the many advantages of using siloxane surfactants in vesicle form, such as substance entrapment, the ability of siloxane surfactants to "spontaneously" form vesicles, and the ability to modulate the siloxane backbone through chemistry (1:30-43). Cen et al. would benefit from employing vesicle structures for all of the

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above reasons, especially when employing compositions which have hydrophobic compounds (such as oils and fatty esters, 7:1-15) therein in an aqueous-based composition.

Claims 11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cen et al. (US Pat. 6,632,420) in view of Tsubaki et al. (US Pat. 5,472,686).

Claim 11: Cen et al. teaches a process for making an aqueous dispersion/microemulsion whereby water and a polysiloxane polyether graft copolymer (4:52-61), an AB siloxane polyether copolymer (4:62-67), or an ABA siloxane polyether copolymer (5:1-5) are mixed to form an aqueous dispersion (example 1 of Cen et al.). Cen et al. further teaches that a water miscible volatile solvent such as isopropanol may be added to the composition (6:58-67). Cen et al. further teaches that the aqueous microemulsion is comprised of dispersed particles having particle sizes of less than 10 microns (1:65-2-4).

Cen et al. does not teach that the silicone polyether graft copolymer is of the $(AB)_n$ type of instant claim 11. However, Tsubaki et al. does explicitly teach $(AB)_n$ block silicone polyether copolymers which have the structural limitations of instant claim 11 [reaction (a) at the bottom of columns 3 and 4]. Cen et al. and Tsubaki et al. are combinable because they are from the same field of endeavor, namely, personal care compositions comprising silicone polyether copolymers. At the time of the invention, a person having ordinary skill in the art would have found it obvious to employ the $(AB)_n$ block silicone polyether copolymers as taught by Tsubaki et al. into the aqueous microemulsions as taught by Cen et al. and would have been motivated to do so because Tsubaki et al. teaches the advantages that the $(AB)_n$ block silicone polyether

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copolymers have in various cosmetic formulations when compared to the graft silicone polyether copolymers and ABA block silicone copolymers such as those taught by Cen et al. (control examples 9, 12, 13, 16, 18, 20, 22 and 24 of Tsubaki et al.).

Claims 13 and 14: Cen et al. teaches a personal product (antiperspirant) resulting from the process of instant claim 11 (example 1).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cen et al. (US Pat. 6,632,420) in view of Tsubaki et al. (US Pat. 5,472,686), as applied to instant claim 11 above, further in view of Hill et al. (US Pat. 5,364,633).

Cen et al., in view of Tsubaki et al. collectively teach the process for making an aqueous dispersion of instant claim 11, as described above. Cen et al. further explicitly teaches a process to prepare silicone-containing microemulsions (1:40-51). Cen et al. further teaches that there are various types of microemulsions (2:5-19), including those having "random-oriented lamellar-like surfactant double layers (bilayers)". While Cen et al. does not explicitly teach the term "vesicle", the forms of microemulsion taught by Cen et al., such as the one comprising surfactant double layers (bilayers) has all of the features of a vesicle structure. A vesicle is a specific type of surfactant composition wherein the surfactant polymers are arranged in one (or more) bilayer structures (lamellae). Therefore, Cen et al. does teach that the microemulsion may be in the form of vesicles. While no specific examples of such microemulsion structures are taught by Cen et al., Hill et al. does teach silicone vesicle compositions (abstract). Cen et al. and Hill et al. are combinable because they are from the same field of endeavor, namely, compositions containing

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silicone-polyether surfactants. At the time of the invention, a person having ordinary skill in the art would have found it obvious to prepare silicone vesicles as taught by Hill et al. using the silicone-polyether structures as taught by Cen et al. and would have been motivated to do so because Hill et al. teaches the many advantages of using siloxane surfactants in vesicle form, such as substance entrapment, the ability of siloxane surfactants to "spontaneously" form vesicles, and the ability to modulate the siloxane backbone through chemistry (1:30-43). Cen et al. would benefit from employing vesicle structures for all of the above reasons, especially when employing compositions which have hydrophobic compounds (such as oils and fatty esters, 7:1-15) therein in an aqueous-based composition.

Claims 15-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cen et al. (US Pat. 6,632,420) in view of Tsubaki et al. (US Pat. 5,472,686).

Claims 15-17: Cen et al. teaches a process for making an emulsion whereby water, a volatile methyl siloxane oil (3:24-4:24), and a polysiloxane polyether graft copolymer (4:52-61), an AB siloxane polyether copolymer (4:62-67), or an ABA siloxane polyether copolymer (5:1-5) are mixed to form an aqueous dispersion (7:53-8:3 and example 1 of Cen et al.). Cen et al. further teaches that a water miscible volatile solvent such as isopropanol may be added to the composition (6:58-67).

Cen et al. does not teach that the silicone polyether graft copolymer is of the $(AB)_n$ type of instant claim 15. However, Tsubaki et al. does explicitly teach $(AB)_n$ block silicone polyether copolymers which have the structural limitations of instant claim 15 [reaction (a) at the bottom of columns 3 and 4]. Cen et al. and Tsubaki et al. are combinable because they are from the

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same field of endeavor, namely, personal care compositions comprising silicone polyether copolymers. At the time of the invention, a person having ordinary skill in the art would have found it obvious to employ the $(AB)_n$ block silicone polyether copolymers as taught by Tsubaki et al. into the aqueous microemulsions as taught by Cen et al. and would have been motivated to do so because Tsubaki et al. teaches the advantages that the $(AB)_n$ block silicone polyether copolymers have in various cosmetic formulations when compared to the graft silicone polyether copolymers and ABA block silicone copolymers such as those taught by Cen et al. (control examples 9, 12, 13, 16, 18, 20, 22 and 24 of Tsubaki et al.).

Claim 19: Cen et al. further teaches that step (I) of instant claim 15 comprises a healthcare active (example 1, AZCH, which is an aluminum salt in the antiperspirant composition of Cen et al.).

Claims 20 and 21: Cen et al. teaches a personal product (antiperspirant) resulting from the process of instant claim 15 (example 1).

Allowable Subject Matter

Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Specifically, none of the above applied references teach or suggest that the volatile siloxane oil is a vinyl functional organopolysiloxane.

Relevant Art Cited

The prior art made of record and not relied upon but is considered pertinent to applicants disclosure can be found on the attached PTO-892 form.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Loewe whose telephone number is (571) 270-3298. The examiner can normally be reached on Monday through Friday from 5:30 AM to 3:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. L./
Examiner, Art Unit 1796
7-Feb-08

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/Randy Gulakowski/

Supervisory Patent Examiner, Art Unit 1796